THE OPIUM ODYSSEY

The Power of the Plant (1860)

1

Introduction

This chapter looks at the history and historic uses of opium, a substance derived from the opium poppy. The seed heads of the opium poppy are the source of chemicals called alkaloids that interact with the brain, producing a characteristic euphoria and helping to control pain. Utilized for its medicinal properties for thousands of years, the essential ingredient in the opium poppy, an alkaloid called morphine, was isolated from opium in the early 1800s. In the 1840s, the hypodermic needle was invented, and this led to the injection of morphine to treat pain. In the mid-1800s, morphine became popular among U.S. physicians who were in the process of attempting to differentiate modern medicine from folk medicine, and the drug was heavily over-prescribed by physicians, leading to America's first drug addiction crisis.

In an era before drug regulation, companies were permitted to advertise directly to consumers and often did so using dubious testimonials from experts and patients using their products. The primary document for this chapter is a series of testimonials published in the *New York Times* by a company marketing the opium-based product Mrs. Winslow's Soothing Syrup, which was advertised as a sleep aid for children. Advertisements like these became artifacts of the nation's struggle with drug addiction and represent the profit-driven effort to market drugs despite the dangers that they posed to society.

Topics covered in this chapter include:

- Pharmaceutical industry
- Industrial revolution
- Morphine
- Opioids
- Wonder Drug marketing

This Chapter Discusses the Following Source Document:
"Mrs. Winslow's Soothing Syrup; for Children Teething." Letter from a Mother in Lowell, Mass. *New York Times*.

The Opium Odyssey
The Power of the Plant (1860)

The opium poppy (*Papaver somniferum*) is a plant with a long and strange history. The humble flower, with paper-like red petals tinged with dark chocolate bordering a bright yellow center, is still cultivated for its splendid beauty and is a favorite for floral gardeners. However, it is the rare collection of chemicals locked away in the plant's tissues that have made the opium poppy one of the world's most valuable and controversial plants. A source of narcotics and analgesics, the opium poppy was discovered and used as a medical aid long before recorded history began. These substances, through certain use, can become intensely addictive and destructive to the human body, leading to a decline in mental and physical capacity and often to death. Tens of millions have died either through abuse of poppy-derived drugs, or from the contest to control poppy production.

Although the opium poppy produces a host of dangerous substances, it remains an important medicinal plant, with many essential pharmaceutical agents still derived from opium poppies and mass-produced for the global medical market. It was because of the opium poppy's medicinal properties that the plant spread around the world and first came to the shores of America.

Opium poppy with seed. By Evelyn Simak via Wikimedia.

The Grand Cultivar

The opium poppy has been cultivated for so long that scientists are uncertain whether the species was created by humans or it once grew wild. Some botanical researchers believe that the opium poppy is entirely a "cultivar," which is a new species or subspecies created by breeding wild varieties. Some botanical historians have suggested that the plant originated as a mutation or a cultivar from the wild poppy (*Papaver setigerum*) that still grows along the Mediterranean and in parts of Africa, whereas others believe that some unknown Asian poppy species was the forerunner of the opium poppy. The poppy belongs to a large botanical family with 28 genera and more than 250 species, many of which are cultivated for their aesthetic qualities.

Whether it ever occurred in the wild or was the product of ancient horticultural inventiveness, *Papaver somniferum* was most likely first cultivated as a food source. The seeds of the poppy are naturally sweet and nutritious and are used as a condiment (perhaps best known in the United States as a topping for bagels and other baked goods), as well as to create a flour and cooking oil. Each year, more than 100,000 metric tons of poppy seeds are produced around the world for the global food market.

A sample of raw opium, via Wikimedia.

The controversial product of the opium poppy is a sticky resinous compound that forms in the tissues of the seed pod and is only produced during the brief period when the pod is forming and maturing. This substance, known as opium, must be harvested by hand, by tapping individual seed pods to extract the nectar. The process of doing so is millennia old.[1]

Opium is often spoken of as a single substance, but it is actually a complex mixture of substances that includes sugars, proteins, water, meconic acid, wax, fats, and sulphuric acid, along with a host of chemicals called "alkaloids," which are organic compounds containing nitrogen and produced only by certain kinds of plants. There are more than 50 alkaloids present in the opium poppy, including morphine, papaverine, noscapine, codeine, and thebaine. Evolutionary biologists have been unable to determine why the opium poppy produces alkaloids, the source of the analgesic (pain-relieving) and narcotic (mood-altering) qualities that have made the opium poppy one of the most sought after, maligned, and celebrated botanicals in history. The opium poppy isn't just the source of a single medicine but has given rise to a whole catalog of different medicinal chemicals. The alkaloid papaverine, for instance, has been used as a vasodilator (drug that increases blood flow), noscapine is being researched as a possible anti-cancer drug, and sanguinarine is used as an antimicrobial agent to prevent infection.

The most famous of the opium poppy's alkaloids, morphine and codeine, are both powerful analgesics capable of reducing pain in situations where other drugs prove ineffective, and both also have mood-altering (narcotic) effects, inducing a euphoric intoxication that has long made opium a sought-after recreational substance. It is these qualities of opium, the intoxicating alkaloids, that are the source of the plant's species name, *somniferum*, meaning "sleep inducing." The name was coined by Carl Linnaeus, the father of biological taxonomy, in his 1753 book *Genera Plantarum* and reflected the ancient use of smoking opium to induce sleep.[2]

Opium poppy cultivation started quite early in history, as a food source, medicinal aid, and recreational intoxicant. In the ancient Sumerian civilization located in what is today Iraq, the plant was grown as early as 3400 BCE, and known as "hul gil," translating as the "plant of joy." Historians have found evidence of a global opium trade dating back to 1300 BCE

between Egypt and the Mediterranean, but it is believed that trading opium actually began much earlier. Opium was so cherished in the ancient world that it became part of religious and spiritual traditions in some societies. Archaeologists have discovered a "goddess of poppies" among the artifacts of the Bronze Age Minoan Civilization in Greece. This curious deity wore three hairpins topped with poppy capsules and is part of an emerging pool of evidence suggesting that the pre-Greek civilizations of the Mediterranean were using the opium poppy as medicine and for recreational intoxication long before there were any written records of the plant.[3]

The Miracle Drug

The substance "opium" got its name from ancient Greece, from the term "opos," or "juice," referring specifically to the fluid derived from the opium poppy, which was consumed in a variety of mixtures to treat insomnia, diarrhea, chronic pain, and digestive conditions. One major leap forward in the medicinal use of opium came via the sixteenth-century alchemist Paracelsus (1493–1541), whose use of potentially poisonous substances like mercury, lead, arsenic, antimony, and opium revolutionized chemical medicine. Paracelsus also gave the world one of the most famous medical formulations of opium, the substance "laudanum," named from the Latin term meaning "a thing to be praised." Unlike later versions of laudanum, which were primarily liquid and contained alcohol, Paracelsus's laudanum was a pill that he called an "immortality" pill; it contained opium, poisonous henbane, bezoair stone, and chunks of preserved human flesh, or "mummy." (At the time, alchemists sometimes preserved and dried the bodies of humans who died at a young age to create an artificially preserved mummy, the tissues of which were then used to create a variety of medicines. The medical benefits, or potential hazards, of consuming mummified flesh have not been determined by research, but the tissue would likely have been similar to modern jerked or dried meats.)[4]

Sixteenth-century alchemist Paracelsus formulated laudanum in a pill form that contained opium, poisonous henbane, bezoair stone, and chunks of preserved human flesh. By Hirschvogel, via Wikimedia.

In 1640, English apothecary Thomas Sydenham blended opium, sherry wine, and herbs to create a commercial laudanum, and it was this basic formulation that created a centuries-long medical revolution and the first opioid addiction crisis in Europe and North America. Laudanum was imported from Europe to the United States in the colonial era, where it was used to treat the symptoms associated with smallpox, cholera, and dysentery. By the time of the American Revolution, opium medicines were well known in the United States and had become a staple in pain management. Thomas Jefferson took laudanum daily to treat chronic diarrhea, and Benjamin Franklin used laudanum to cope with the pain of bladder stones. Laudanum was the pain reliever famously given to Alexander Hamilton after his fatal duel with Aaron Burr.

It was in the early nineteenth century, in the German town of Paderborn, that an apothecary in training named Friedrich Sertürner isolated the active alkaloid in opium, now known as morphine. Experiments proved that this isolated substance was extremely functional at inducing sleep, and Sertürner named his discovery after the Greek god of sleep, Morpheus. Until the late 1800s, morphine was delivered primarily as laudanum, but the 1843 invention of the hypodermic syringe by Scottish physician Alexander Wood created a new method of delivery, allowing doctors to introduce morphine directly into the blood stream for faster, more potent results. Another derivative of the poppy, codeine, was synthesized in 1874 by British scientist C.R. Wright and later commercialized by the German company Bayer Pharmaceuticals in 1895.[5]

In the 1800s, the medical market was largely unregulated, and there were no limits on how drug companies could prepare and market morphine and other forms of opioids. Women were prescribed morphine for menstrual cramps or for discomfort during pregnancy, while, by the late 1800s, physicians were prescribing opioids to combat psychological distress such as depression or anxiety. Historians have found that in some

parts of the country, nearly one-fourth of all drugs prescribed in the late 1800s were some form of opium derivative. Among the most famous was "Mrs. Winslow's Soothing Syrup," a mixture of alcohol and morphine that was produced as a children's medication to combat the pain of teething, diarrhea, or general "fussiness."

Drugs like Mrs. Winslow's Soothing Syrup were advertised directly to the public and were sold through mail order, pharmacies, and corner stores. This was part of the "patent medicine" business that played a major role in initiating some of the nation's most desperate addiction crises. Companies marketing patent medicines used what might today be called "fake news," producing fake testimonials and citing false medical statistics to make it appear that their products were established medicines when, in reality, many of these substances had not been tested. This letter from a December 4, 1860, issue of the *New York Times* provides an example of how Mrs. Winslow's Soothing Syrup was marketed to the nation's parents, including a dubious testimonial from a satisfied customer:

LETTER TO THE EDITOR

New York Times, **December 4, 1860**
Source Document

DEAR SIR: I am happy to be able to certify to the efficiency of MRS. WINSLOW'S SOOTHING SYRUP, and to the truth of what it is represented to accomplish. Having a little boy suffering greatly from teething, who could not rest, and at night by his cries would not permit any of the family to do so, I purchased a bottle of the SOOTHING SYRUP, in order to test the remedy, and,…

When given to the boy according to directions, its effect upon him was like magic; he soon went to sleep, and all pain and nervousness disappeared. We have had no trouble with him since, and the little fellow will pass through with comfort the excruciating process of teething, by the sole aid of MRS. WINSLOW'S SOOTHING SYRUP. Every mother who regards the health and life of her children should possess it.

Letter to the Editor continued

LOWELL, Mass. Mr. H.A. Alger.

A DOWN-TOWN MERCHANT,

Having passed several sleepless nights, disturbed by the agonies and cries of a suffering child, and becoming convinced that MRS. WINSLOW'S SOOTHING SYRUP was just the article needed, procured a supply for the child. On reaching home, and acquainting his wife with that he had done, she refused to have it administered to the child, as she was strongly in favor of Homeopathy. That night the child passed in suffering, and the parents without sleep. Returning home the day following, the father found the baby still worse, and, while contemplating another sleepless night, the mother stepped from the room to attend to some domestic duties, and left the father with the child. During her absence he administered a portion of the SOOTHING SYRUP to the baby, and said nothing. That night all hands slept well, and the little fellow awoke in the morning bright and happy…

Millions of bottles of MRS. WINSLOW'S SOOTHING SYRUP are now used every year in the United States for children teething, with never-failing success. Relief is IMMEDIATE and CERTAIN.

MRS. WINSLOW'S SOOTHING SYRUP is sure to regulate the bowels.

Orders are coming in every day from druggists in all parts of the country, "send me more of MRS. WINSLOW'S SOOTHING SYRUP."

Millions of bottles of MRS. WINSLOW'S SOOTHING SYRUP are sold every year in the United States.

MRS. WINSLOW'S SOOTHING SYRUP never fails to give immediate relief.

MRS. WINSLOW'S SOOTHING SYRUP is sold by all druggists throughout the United States.

HIGHLY IMPORTANT TO MOTHERS.—MRS. WINSLOW'S SOOTHING SYRUP is the only thing that you can rely upon to give relief to yourself, and relief and health to your infant.

MRS. WINSLOW'S SOOTHING SYRUP has been the means of restoring the drooping spirits of many others.

This is the season of the year to use MRS. WINSLOW'S SOOTHING SYRUP.

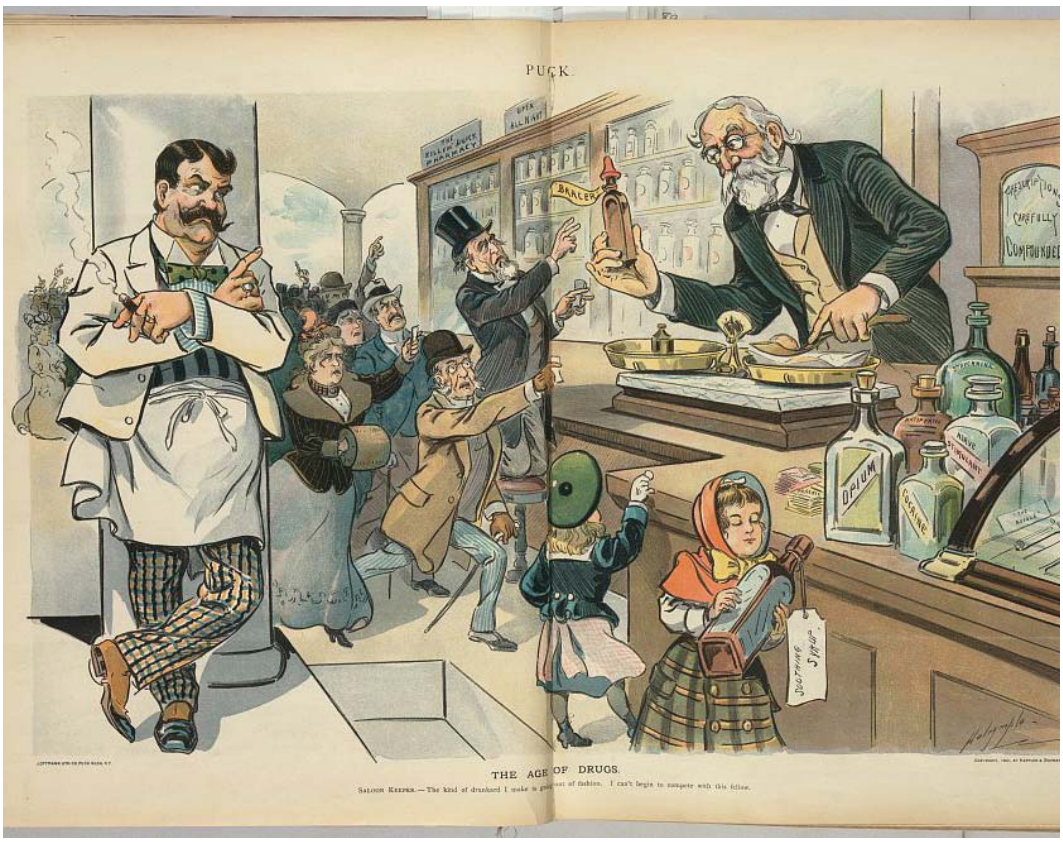
To every mother who has children suffering from any of the complaints incident to the period of teething, we

continued

say to not let your own prejudices, or the prejudices of others, stand in the way of the relief that will be sure—yes, absolutely sure—to follow the use of MRS. WINSLOW'S SOOTHING SYRUP.

Sold by druggists throughout the world.

Price only 26 cents per bottle.[6]



A saloon keeper comments, "I can't begin to compete with this fellow," referring to a pharmacist's inventory of "arsenic, strychnine, . . . opium, cocaine, and the needle." A sign on the wall reads "The Kill'em Quick Pharmacy," and a young girl has purchased a bottle of "soothing syrup." By Louis Dalrymple, centerfold for *Puck*, v. 48, no. 1231, 1900, via Library of Congress.

The Price of Joy

Although opium is internationally prized as a pharmacological agent, it is no less famous for its more insidious properties, creating a psychological and physiological dependence, known generally as "opioid addiction," upon continued or sustained use.

When ingested, opioids activate neurological circuits in the mesolimbic (midbrain) system known as "reward" circuits because they release the chemical dopamine into the brain, producing feelings of pleasure. When first taken, opioids reduce the activity of the locus coeruleus, a portion of the midbrain related to sleep, leading to drowsiness, slowed respiration, and lowered blood pressure, which creates an intoxicating effect and can induce sleep or relaxation. With continued use, the neurons in the locus coeruleus become hyper-stimulated as the body attempts to adjust to the level of morphine in the blood stream. If the supply of opioids is suddenly cut off, the heightened activity of the locus coeruleus results in "withdrawal symptoms" that include anxiety, jitters, muscle cramping, and diarrhea.

These in turn encourage the person to take more opium to eliminate such effects. The progression is from taking a substance to induce a pleasurable response, to taking a substance to avoid an unpleasant response. The longer a person takes opioids, the less pleasurable the experience of ingestion becomes and the higher the dose needed to achieve intoxication. When an individual attempts to break their dependence on opioids, they will often cease ingestion long enough for their body to begin to return to normal function but then return to taking a dose similar to that they had built up to before ceasing use. As the person's body may no longer be capable of handling the same level of the drug, overdose and death can occur. Similarly, those dependent on the drug might be forced to switch to unknown versions, derivatives, or opioids from untrustworthy sources, and this can also lead to death if a person ingests a higher dose

than his or her body can metabolize, reducing blood pressure and respiration and resulting in heart failure.[7]

In the United States, the opioid addiction crisis began with the civil war. The Union Army issued more than 10 million opium pills to soldiers, in addition to 2.8 million ounces of opium powders and other morphine-based substances. Though addiction rates are unknown, many soldiers returned home addicted to opium. The popularity of opium as a treatment for nearly everything meant also that those who returned wounded, whether or not they had already developed dependence, were likely to be treated with opiids at some point, with the potential for addiction following.

> ***Women were especially hard hit by opium addiction in the nineteenth-century. This was because the male-dominated scientific and medical industries were highly dismissive of feminine medical and psychological health, resulting in a situation where a wide variety of psychological and physiological issues were classified simply as "feminine problems." These included menstrual cramps, depression, anxiety, nervousness, morning sickness and many of the other "symptoms" associated with pregnancy and childbirth. Physicians at the time prescribed laudanum to women suffering from everything from headaches to an unhappy marriage and, by the late 1800s, women made up more than 60 percent of all opium addicts in the nation.***[8]

As opium addiction spread through the United States, the same was happening in England. In the Victorian Era, among Europe's artistic elite, opium became popular not only as a medicine, but as a stimulant for artistic inspiration. A whole slew of famous British writers and intellectuals

like Bram Stoker, Charles Dickens, George Eliot, Percy Shelley, and Lord Byron used opium as a recreational drug, and historians have found evidence that at least some of these famed intellectuals also battled dependency.

Diagnosing an Epidemic

By the time Mrs. Winslow's Soothing Syrup hit the market in the United States, opium addiction was already well known. Historians have found significant evidence to suggest that some of the companies involved in creating and marketing opioids were aware that the substances they were marketing were addictive and dangerous, yet they continued to do so as the desire for profit outweighed considerations of public welfare. The patent medicine business became one of the primary vectors for addiction into the early 1900s.

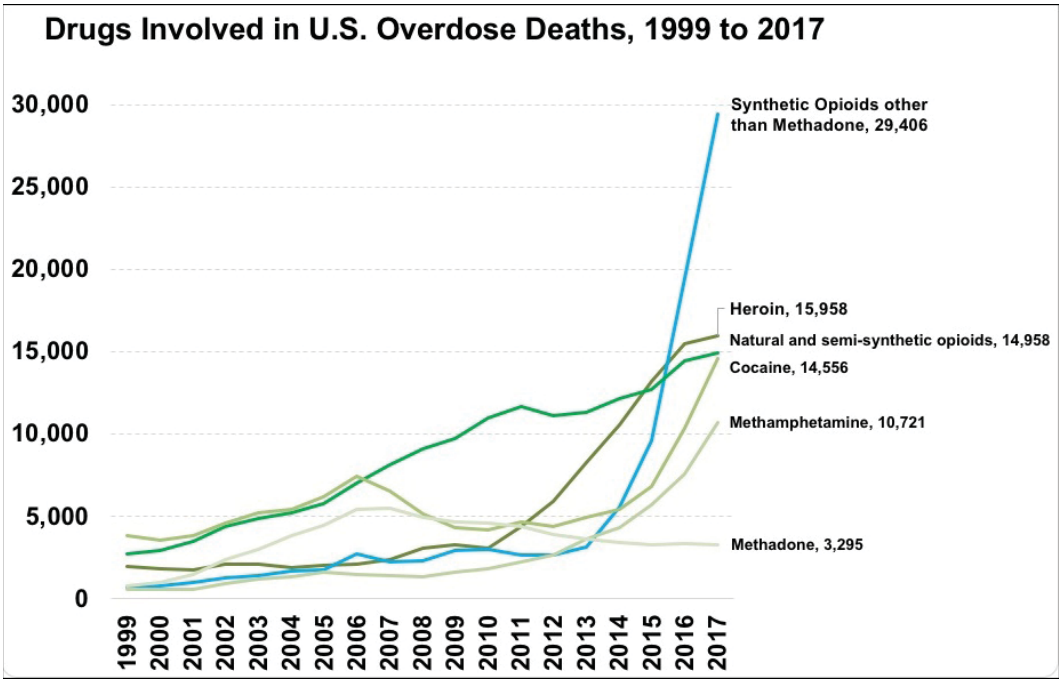
By the 1870s, the U.S. government was well aware of the opioid addiction problem; but because the United States had evolved to embrace a highly skeptical attitude about the "tyranny" of government regulation, they did nothing to address the problem until the early 1900s. Corruption also played a role, as many politicians of the era were indebted to opioid manufacturers or vulnerable to financial incentives from industry lobbyists. The first attempt to regulate narcotics in the United States, in 1890, wasn't actually related to public health but simply placed an additional import tax on opioids so that the government would reap larger rewards from the industry. The opioid addiction crisis of the 1800s was, therefore, the result of many converging factors, including over-prescription by physicians, a lack of government regulation, and direct-to-consumer marketing by unscrupulous pharmaceutical manufacturers. This pattern repeats throughout American history, as the often-incompatible goals of promoting public health and welfare are set against promoting free-market competition, resulting in the exploitation of consumers.

In the 1890s, physicians led the effort to combat opioid use and to popularize the dangers of addiction. However, they were caught between their role as managers of public health and their need to stay in business. Physicians who were reluctant to provide opium risked losing their livelihood, as patients switched to other doctors willing to do so more freely. Medical textbooks began incorporating warnings about addiction around the late 1800s, while opioids sold in Britain were labeled as “poison.” Within the medical community, and eventually within the public at large, there emerged a view that a doctor who prescribed opioids as a first resort was either incompetent or unethical, and opioid addiction was increasingly portrayed as unsavory and immoral.

With medically prescribed opioids in decline (though still prevalent), the primary source became illegal opium, which was often smoked by those seeking intoxication more than medical relief. Like the artists of Victorian England who used laudanum to induce creativity, opioids became part of America’s underground artistic culture, used by musicians, poets, and intellectuals seeking altered states of consciousness. The United States has lost many luminary artists to opium addiction, including Janis Joplin, Jimmy Hendrix, Prince, Hank Williams, John Coltrane, Eliot Smith, Heath Ledger, John Belushi, and River Phoenix, among others.

Opium addiction was never eliminated and has remained part of American culture from the 1700s to the twenty-first century. According to the Centers for Disease Control and Prevention (CDC), 64,070 Americans died of drug overdoses in 2016, with 15,446 dying from ingesting heroin and other opioids claiming the lives of another 20,145. That same year, the Substance Abuse and Mental Health Services Administration (SAMHSA) found that at least 11.8 million Americans were abusing or misusing some form of opioid each year. Physician over-prescription remains one of the primary sources for opium addiction, with prescriptions for opioid painkillers quadrupling between 1999 and 2014. Between 2010 and 2012

there were 81.2 opioid prescriptions issued for every 100 people in the United States. However, most opium-related deaths occur when addicts, unable to obtain a prescription, switch to more-powerful illicit versions of the drug and then accidentally overdose—for instance, switching from prescribed hydrocodone to black-market fentanyl (which is much more powerful).



Yearly overdose rates in the United States, and the drugs involved. Among more than 64,000 deaths estimated in 2016, the sharpest increase occurred among deaths related to fentanyl and synthetic opioids. By National Institute on Drug Abuse; data source CDC, via Wikimedia.

Scientists have found a correlation between opium addiction and "despair," with addiction and abuse rates rising as overall life satisfaction declines and depression rates increase. After the Civil War, for instance, there was a spike in addiction among white southerners, and historians believe that this was because they were forced to adjust to a new culture. Historian David Courtwright has found evidence to suggest that they were turning to opium to cope with the hopelessness, depression, and despair they experienced in the wake of the war. Black southerners, on the other hand, benefitted from the Civil War, and so historians have found that opium use among black southerners declined after the war. In the twenty-first century, opium addiction is still most prevalent among white communities and is most pronounced in communities suffering from economic stagnation, such as America's declining middle class.

If this emerging view of addiction as a correlate of despair and hopelessness is correct, it may help to explain why attempts to address opium addiction in the United States have been largely ineffective. For much of history, U.S. authorities have attempted to combat opioid use by punishing sellers and users or by attempting to stem the supply of opium brought into the country or sold through the black market. These efforts do little, however, to address the demand or desire for opium. Those seeking drugs often switch to other drugs or to other, possibly more dangerous, illicit opioids. This increases the potential for overdose, addiction, and abuse, and decades of prohibition and aggressive anti-drug propaganda and policing have done very little to reduce these rates for opium and many other addictive substances.[9]

CONCLUSION

The nation's first opioid crisis resulted from the unregulated over-prescription and profit-driven marketing of morphine. Addiction hit two groups most acutely, veterans of the Civil War who became addicted after being given pain medication and who used morphine to treat symptoms of what would now be called post-traumatic stress disorder, and women who were prescribed morphine for a variety of issues from depression and anxiety to discomfort associated with pregnancy. Physicians eventually led the effort to address morphine addiction by controlling prescription habits and criticizing companies that over-prescribed opioids, but these efforts did little to reduce addiction rates because the underlying causes of addiction were not addressed. As morphine became more difficult to obtain and doctors more frequently resisted prescribing opioids, addicts and drug users shifted to black-market versions of the drugs.